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ISOLATION OF ANTHRAX BACILLUS FROM A SHAVING MUG

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During the last few years many cases of anthrax have occurred in man from the use of shaving brushes contaminated with anthrax bacilli.

Lederer and Leak¹ state that "due to the mobilization of large forces in the warring nations the demand for shaving brushes soon exceeded the supply, and bristles from questionable sources were employed in their manufacture and outbreaks of anthrax reported followed as a logical consequence. Among English troops in France 28 cases occurred from 1915 to February, 1917. Eighteen infections with anthrax occurred among the troops in England from the beginning of the war until February, 1917. The most thoroughly studied series, however, was that of 19 civilian cases in Great Britain. In most of these cases the proof of the source of infection was absolute, and in other cases circumstantial evidence was strong."

Norton and Kohman² report a fatal case in a soldier following the use of a shaving brush recently purchased by the patient and which contained anthrax bacilli. Symmers and Cady³ examined 40 shaving brushes purchased from pedlers in New York and from shops, and 3 were found to harbor virulent anthrax bacilli. Casey⁴ found that the isolation of anthrax bacilli from shaving brushes is accomplished better by animal inoculation than by culture.

REPORT OF CASE OF ANTHRAX

On May 31, 1922, a patient with anthrax of the neck was admitted to the Johns Hopkins Hospital, and the health department was called on for anthrax serum, which was given; on June 6, the patient was convalescent. The anthrax bacillus had been isolated from the pustules in the laboratory of the hospital, but no organisms were isolated from the shaving brush used by the patient. By mistake the brush was boiled for 2 hours in the hospital laboratory. The shaving mug had not been obtained. The shaving mug previously used by the patient was sent to the health department laboratory for examination. This cup had been on the market for 2 years and was found to contain virulent anthrax bacilli.

The cup itself was stuffed with paper, which was soaked in sterile salt solution for 2 hours; the cup was washed thoroughly in salt solu-

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¹ Am. Jour. Pub. Health, 1919, 9, p. 114.

² Jour. Am. Med. Assn., 1919, 72, p. 1729.

³Ibid., 1921, 77, p. 212.

⁴ Am. Jour. Med. Sc., 1920, p. 742.

tion also. The cup washings and the solution in which the paper soaked were mixed and centrifugated for 5 minutes. The supernatant fluid was poured off and the sediment mixed with salt solution, about 4 c c of which were inoculated subcutaneously into a guinea-pig, which died in 72 hours with characteristic lesions. Smears from the liver, spleen, and heart blood showed a gram-positive bacillus and cultures were made on agar slants and plates. After 24 hours, the agar tubes showed pure cultures of anthrax bacilli, which again produced the disease in a guinea-pig. Paraffin sections showed the liver, spleen, and heart blood full of anthrax bacilli.

The remainder of the mug washings was inoculated on agar plates in 8 different dilutions and incubated for 48 hours, when colonies of anthrax bacilli were found to have developed.

In order to be absolutely sure of the diagnosis a loopful of the pure cultures was rubbed intracutaneously on the abdomen of a guinea-pig, which died in 44 hours. There was edema at the point of inoculation, and all organs showed typical anthrax characteristics, the spleen was greatly enlarged, and smears from the liver, spleen, and heart blood showed bamboo rod forms of anthrax bacilli surrounded by a capsule.

SUMMARY

From the results of the examination of washings of the cup it is evident that the shaving brush in all probability harbored anthrax bacilli, and that spores or bacilli adhered to the mug after the removal of the brush, showing again the great resistance of this organism.